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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,669	11/04/2003	Masahiro Fushimi	p24120.dc1.doc	6484

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EXAMINER	
PENG, CHARLIE YU	
ART UNIT	**PAPER NUMBER**
2883	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,669	FUSHIMI ET AL.	
	Examiner	Art Unit	
	Charlie Peng	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) *13-26* is/are withdrawn from consideration.

5)☒ Claim(s) *28* is/are allowed.

6)☒ Claim(s) *1-8 and 27* is/are rejected.

7)☒ Claim(s) *9-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/699,669.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/21/04, 2/23/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Invention I in the reply filed on 16 May 2005 is acknowledged. The traversal is on the ground(s) that no serious burden existed. This is not found persuasive because the search for the elected invention would only partially overlap the search for that which is non-elected. Furthermore, any determination as to patentability of the elected invention would not be sufficient to establish a patentability determination as to the non-elected invention.

The requirement is still deemed proper and is therefore made FINAL.

Claims 13-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 16 May 2005 (addressed above).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,978,190 to Veith. Veith teaches an optical waveguide **3** having an

end/entrance face **14** including a core region **22** and a cladding region **23** optically coupled with a laser diode **2**. (See at least **Fig. 1** and its description) Veith further teaches the cladding region **23** is provided a reflective coating, e.g., an aluminum coating, so that it has a higher reflectivity than the core region **22**. (See at least **column 3, lines 12-45**) Veith further teaches that when a laser beam **7** is not focused on the center of the optical waveguide, light reflected by the end face **14** has an astigmatic distortion. (**Column 4, paragraph 5**)

With specific reference to claim 3, the limitation "vicinity" does not preclude the entire cladding region.

Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Application number 07-339649 to Hatori et al. Hatori teaches a light wave emitted from an optical element **15** coupled to a fiber grating **23** with an end face **23a**. A laser beam **11** is fed back to a semiconductor **10** after being *reflected by and diffracted through* the fiber grating. (See translated abstract and drawings attached)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Veith. Veith teaches the optical fiber as disclosed in claim 1 having an entrance face coupled

with a light source and a cladding region at least partially coated except for the coating to have a mirror surface. Veith teaches that the cladding is coated to have a reflection factor of 0.99. A perfect mirror surface is known to have a reflection factor of 1.0. It would have been obvious to one having ordinary skill in the art at the time the invention was made to maximize the reflection factor on the cladding region. The motivation would be that a larger reflection factor increases the amount of light reflected from the fiber and subsequently the signal is easier to detect.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Veith. Veith teaches the optical fiber as disclosed in claim 1 having an entrance face coupled with a light source and a cladding region at least partially coated except for the fiber entrance being perpendicular to an optical axis of the fiber. Fig. 1 of Veith appears to show the end face 14 to be perpendicular to the core, i.e., optical axis. Nonetheless, it would have been obvious to one having ordinary skill in the art to use a fiber with perpendicular end face. The motivation would be that this allows all optical compoments (lenses, etc.) to be located in a single straight line thus minimize the size of the optical module.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Veith in view of U.S. PGPub 2004/0213515 to Pezeshki et al. Veith teaches the optical fiber including all of the limitations disclosed in claim 1 except for the entrance face being inclined against an optical axis of the fiber. Pezeshki et al. teaches the using of a angle-cleaved fiber in an active aligning optical device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the fiber by

Pezeshki in Veith's optical module. The motivation would be that one would not to tap a signal in a direct optical path of the light beam.

Allowable Subject Matter

Claims 9 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Hatori teach the optical fiber with a structure that reflect and diffract a light beam except for protruding or recessed core region. Although prior art teach optical communication fibers with protruding and recessed cores on their end faces, (e.g., US. Patent 5,908,562, U.S. PGPub 2002/0076157) they do not teach or suggest the end faces can reflect and diffract light beams coupled thereon. It is the examiner's opinion that the prior art of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

Claims 10 and 11 are objected to but also would be allowable by virtue of being dependent upon allowable claim 9.

Claim 28 is allowed. Hatori teaches the optical fiber with steps (grating) that is coupled to a light source and reflects a light beam except for the step height being less than $\lambda/4n$. The condition for high reflection, known as the Bragg condition, relates the reflected wavelength λ, or Bragg wavelength, to the grating period P (step height) and the average refractive index n via $\lambda = 2\,n\,P$. Thus the grating period would be at least twice as large as that claimed by the applicant. It is the examiner's opinion that the prior

art of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 9 am - 6 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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